

## REMARKS

Prior to examination on the merits, applicants respectfully request entry and consideration of the above amendments and newly submitted claims. Applicants' newly submitted claims 48-152 are supported by the specification and accordingly, do not constitute new matter.

The subject matter of claim 48 is supported throughout the specification and specifically at page 13 lines 6-12 disclosing the deposition of a layer of a photoresist to create selected regions on the support; at page 19 line 28 to page 20 line 15 which discloses depositing a photoresist and a method whereby a resist is deposited, selectively exposed, and etched leaving a portion of the substrate exposed for coupling and that the steps of depositing resist, selectively removing resist and monomer coupling are repeated to form polymers of desired sequence at desired locations; at page 3 lines 1-16 where it is disclosed that additional monomers are coupled to a first group of monomers and that the process is repeated until a diverse set of polymers of desired sequence and length is formed on the substrate; at page 3 line 39 to page 4 line 4 where it is disclosed that dimers, trimers and larger polymers of controlled length and monomer sequence are prepared by repeating steps of adding different monomers to a substrate; at page 13 line 38 to page 14 line 10 which describes methods of forming arrays using a dispenser to move from region to region and depositing only as much monomer as necessary; and at page 15 lines 13-14 which describe coupling as referring to the addition of a monomer in a polymer.

Further support for claims 48 and 49 is found at page 25 line 8 to page 28 line 16 which describes locating a dispenser containing a solution comprising a monomer a distance away from a surface of a support; dispensing a droplet of 5 nanoliters or less from the dispenser with the droplet contacting the surface at a localized area smaller than 1 cm<sup>2</sup> (page 10 line 9); allowing

the compound to attach directly or indirectly to the surface of the support at the localized area; and repeating the steps until an array of at least 10 different polymers at different localized areas is formed (page 24 line 20). Support for the dependent claims is provided at least at the citations to follow:

<u>Claim</u>	<u>Subject Matter</u>	<u>Citation</u>
50.	Compound is dissolved in the solution	p. 14 l. 3
51.	Resist includes polymethylmethacrylate or polysulfone	p. 19 l. 35-38
52.	Distance away is between about 5 microns and about 50 microns	p. 27 l. 16
53.	Distance away is about 10 microns	p. 27 l. 18
54.	Droplet fits within a region having a diameter of less than about 300 microns	p. 28 l. 13-14
55.	Monomer comprises a nucleotide or an amino acid	p. 6 l. 33 to p. 7 l. 31
56.	Polymer comprises a nucleic acid or polypeptide	p. 6 l. 2 to p. 9 l. 16; p. 4 l. 5-
57.	Polymer comprises at least 2 monomers	p. 24 l. 23-26
58.	Polymer comprises greater than 100 monomers	p. 24 l. 23-26
59.	Polymer comprises 2, 3, 4, 5, 6, 10, 15, 20, 30, 40, 50, 75, or 100 monomers	p. 24 l. 23-26
60.	Support is selected from the group consisting of substantially flat substrates, substrates having raised or depressed regions, beads, gels, sheets, particles, strands, precipitates, spheres, containers, capillaries, pads, slices, films, plates, and slides	p. 9 l. 18-28; p. 14 l. 15-26.
61.	Support comprises a gel.	p. 9 l. 18-28; p. 14 l. 15-26.
62.	Support comprises biological materials, nonbiological materials, organic materials or inorganic materials	p. 14 l. 15-16
63.	Support is a disc, square, or circle	p. 14 l. 20
64.	Localized area is smaller than $1\text{mm}^2$	p. 10 l. 1-14
65.	Localized area is smaller than $0.5\text{mm}^2$	p. 10 l. 1-14
66.	Localized area is smaller than $10,000\text{ }\mu\text{m}^2$	p. 10 l. 1-14
67.	Localized area is smaller than $100\text{ }\mu\text{m}^2$	p. 10 l. 1-14
68.	Array of at least 100 different reagents at different localized	p. 10 l. 16-31

- areas is formed p. 24 l. 19-26
69. Array of at least 1000 different reagents at different localized areas is formed p. 24 l. 19-26
70. Array of at least 10,000 different reagents at different localized areas is formed p. 24 l. 19-26
71. Array of at least 100,000 different reagents at different localized areas is formed p. 24 l. 19-26
72. Array of at least 1,000,000 different reagents at different localized areas is formed p. 24 l. 19-26
73. Array of at least 1000 different compounds occupying localized areas within 1 cm<sup>2</sup> of the surface of the support. p. 25 l. 33-35
74. Support comprises glass, derivatized glass, pyrex, quartz, a polymeric material, polystyrene, polycarbonate, silicon or a gel. p. 20 l. 16-20  
p. 38 l. 40-42  
p. 9 l. 18-28;  
p. 14 l. 15-26.
75. Solution of the compound comprises an aqueous solution p. 4 l. 17-18
76. Dispenser comprises a plurality of dispensing units, wherein the plurality of dispensing units is in fluid communication with a solution comprising a compound and wherein steps (c) and (e) comprise dispensing a droplet of 5 nl or less from one or more of the plurality of dispensing units. p. 14 l. 7-10  
Figure 12
77. Plurality of dispensing units comprises a manifold of delivery lines p. 14 l. 8-10  
Figure 12
78. Plurality of dispensing units comprises an array of pipettes p. 14 l. 8-10  
Figure 12
79. Plurality of dispensing units comprises a series of tubes p. 14 l. 8-10  
Figure 12
80. Plurality of dispensing units includes control valves p. 23 l. 14-15
81. Monomer is bound indirectly to the surface of the support via a linker molecule p. 14 l. 34-39
82. Dispenser is moved relative to the support p. 14 l. 3-5
83. Support is moved relative to the dispenser p. 24 l. 9-11
84. One or more localized areas are spaced less than about 3 mm apart p. 25 l. 24-26
85. One or more localized areas are spaced less than between about 5 microns and 100 microns apart p. 25 l. 24-26
86. One or more localized areas has an angular relation between

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|     | each localized area of about 1 degree  | p. 25 l. 27-29  |
| 87. | One or more localized areas has an angular relation between each localized area of about 0.1 degree          | p. 25 l. 27-29  |
| 88. | Support comprises at least about 100 localized areas   | p. 25 l. 29-31  |
| 89. | Support comprises at least about 1000 localized areas  | p. 25 l. 29-31  |
| 90. | Support comprises at least about 10,000 localized areas  | p. 25 l. 29-31  |
| 91. | Support comprises at least about 1000 localized areas per cm <sup>2</sup> of surface of substrate            | p. 25 l. 33-35  |
| 92. | Support comprises at least about 10,000 localized areas per cm <sup>2</sup> of surface of substrate          | p. 25 l. 33-35  |
| 93. | Support comprises a strand including one or more of glass, derivatized glass, quartz or a polymeric material | p. 20 l. 16-20<br>p. 38 l. 40-42<br>p. 9 l. 18-28<br>p. 14 l. 15-26 |
| 94. | Surface of the support is cleaned prior to the step of dispensing a droplet                                  | p. 20 l. 44-45  |
| 95. | Dispenser comprises a pipette  | p. 14 l. 5-10   |
| 96. | Dispenser comprises a capillary tube   | p. 28 l. 14   |

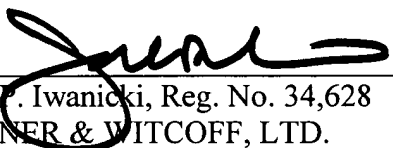
Claims 97-152 include subject matter the support for which is provided above.

Applicants respectfully request entry and consideration of the amendments and newly submitted claims.

Respectfully submitted,

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